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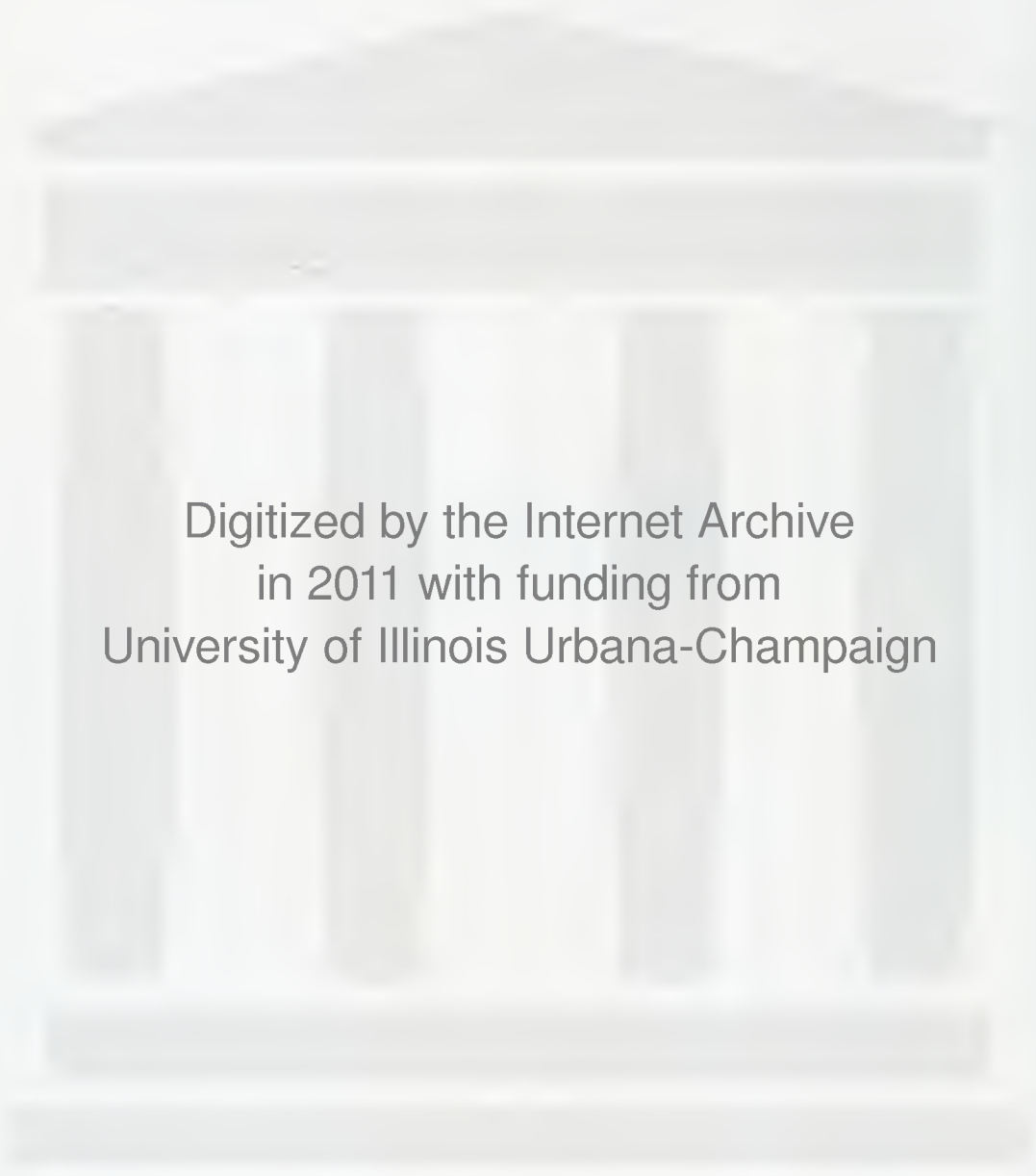
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WHAT WAS NEW IN OHLIN'S 1933-34 MACROECONOMICS?

Hans Brems, Professor of Economics

#457

College of Commerce and Business Administration
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Summary:

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WHAT WAS NEW IN OHLIN'S 1933-34 MACROECONOMICS?

*Hans Brems**

The purpose of the present paper is twofold. First, I shall try to summarize what was new in Ohlin's 1933 article [14] on the formulation of monetary theory. This summary can be brief——and should be, now that the article has, at long last, been translated into English. Second, I shall try to review Ohlin's as yet untranslated 1934 book [15] on monetary policy, public works, subsidies, and tariffs as measures against unemployment. My review should give an impression of what the entire book was like but will naturally pay particular attention to the relation between the 1933 article and the 1934 book and to points at which the latter broke new ground. At such points I shall, as far as possible, let Ohlin speak for himself in direct translation.

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I. OHLIN'S 1933 ARTICLE

To Bertil Ohlin in 1933, physical output was a variable. Its variations are described explicitly in the core of his 1933 article, i. e. Secs. 6 through 8. Sec. 6 deals with the time sequence of price changes and examines the case of a sharp reduction of the propensity to save. The result of such a reduction may be expanding physical output, expanding employment, and a higher volume of saving. Sec. 7 on a process of rising prices, too, "will assume output to expand in response to growing demand." In Sec. 8 output contracts in response to contracting demand.

So far Ohlin anticipated Keynes' General Theory. But he went beyond it in two respects.

First, Ohlin never used a Keynesian static equilibrium of physical output——often illustrated by the 45°-line diagram ——in which output less than equilibrium will lead to inventory depletion and output greater than equilibrium to inventory accumulation. Ohlin's physical output was not an equilibrating variable in such a static equilibrium. But Ohlin did see a feedback mechanism: His physical output responds to demand. In doing so,

it generates new income, hence new demand. Thus, in Ohlin's saving example in Sec. 6 referred to above, his physical output will rise as a result of the increased consumption demand, and there will be a feedback from physical output via income generated by it to new consumption demand. There will also be a feedback via induced investment. In Ohlin's own words, "the rising investment demand of the consumers' goods industries will eventually bring about an increase in total investment. Total saving, then, is not reduced but, on the contrary, increased, despite the fact that consumption is up. What makes this possible is expanding output." Ohlin sees the feedback, then, but his feedback is not telescoped into an instant static equilibrium along an output axis the way the Keynesian feedback is in the 45^{0} diagram. Ohlin's feedback takes place along a time axis——the way Wicksell's interaction between prices and income did at parametric output in Interest and Prices [21]. The difference between Wicksell's and Ohlin's cumulative processes is that the former was an interaction between prices and income only, the latter an interaction among price, physical output, and income. Like all Swedish theorists of his generation, Ohlin was brought up on Wicksell, hence had a head start in dynamics and was convinced of its power. He concludes his Sec. 6 by saying: "By now it should be sufficiently clear that the effects of a given primary change will differ widely if the

secondary reactions occur in one time sequence rather than another." Perhaps the most valuable contribution of Ohlin's 1933 paper lies in its explicit analysis of such time sequences.

Second, Keynes gave greatest emphasis on physical output and paid less attention to prices: He came around to them in his Ch. 21 ("The Theory of Prices"), [7], 292-309, and observed that "instead of constant prices in conditions of unemployment, and of prices rising in proportion to the quantity of money in conditions of full employment, we have in fact a condition of prices rising gradually as employment increases." [7], 296. But the chapter came after the party was almost over: Ch. 21 is the last of the main body of General Theory. To Ohlin, prices did not come in as an afterthought. From the outset his prices were always varying in response to his demand along with his physical output. This points to a present-day inflation-unemployment tradeoff.

In one respect Ohlin failed to go beyond Keynes. As Wicksell and Keynes had done, Ohlin analyzed the investment-interest relationship. But that was as far as the three of them went. They did not see Fisher's [3] distinction between a "money" rate (the rate of interest in terms of gold) and a "real" rate (the rate of interest in terms of wheat or of goods in general), playing a role in monetarist writing from Turgot [19] to Mundell [11]. Keynes

knew Fisher's work but was not impressed.[1] Ohlin never mentioned it. Keynes had the better excuse: He paid less attention to prices anyway. But to Ohlin, prices were always varying along with physical output.

II. OHLIN'S 1934 BOOK

On April 14, 1934, Ohlin's report to the Swedish Unemployment Committee[2] was submitted to the King by the secretary of the Committee, Dag Hammarskjöld. As a volume in the findings of the committee, the report was published a few months later by the Royal Printing House under the title *Penningpolitik, offentliga arbeten, subventioner och tullar som medel mot arbetslöshet* (Monetary Policy, Public Works, Subsidies, and Tariffs as Measures against Unemployment).

The book had three parts. Part I was an expansion of the 1933 article. Part II was a systematic and clear analysis of monetary policy, public works, subsidies, and tariffs as measures to generate an economic expansion. Part III——the shortest of the three——dealt with measures to cope with structural unemployment in specific

industries or geographical regions.

Ch. I. Principles of Monetary Theory

The 1934 book may be viewed as an application of the 1933 article to problems of employment policy. Ohlin himself must have viewed it in this way, or he would not have devoted his entire 77-page long Part I of his 176-page book to an expanded reproduction of his 1933 article. The early methodological and terminological parts of the article are reproduced almost verbatim in Ch. 1.

But in that chapter two things happened to what in Ohlin's 1933 article had been called "the intention to save" ("sparviljan"). First, the equivalent term "propensity to save" ("sparbenägenhet")[3] was added; second the two were formally defined as follows.

> The "intention to save" and "propensity to save" of an individual or a firm are defined as their planned savings ratio, i. e. the relation they intend to maintain between new saving and net income. This intention to save is a function of, among other things, expected future

> income and the level of the rate of interest. The planned savings ratio is something entirely different from the relation in an ex-post account between, on the one hand, net new saving, equalling new investment, and on the other hand net national income; the latter relation could be called "a national new investment ratio". [15], 20n.

The reason why the 1934 book offered explicit definitions of certain terms left undefined in the 1933 article is probably that the book was adressing a wider audience than the article was. In accordance with Swedish constitutional practice the book was a public document, whereas the article was meant for professional colleagues only.

Ch. II. The Character of Processes of Expansion and Contraction

In Ch. II the mechanisms of expansion and contraction are set out once again, but more completely so, with more cases examined, and with more definitional help to the reader.

Explicit definitions of the key concepts of expansion and contraction are offered in the opening lines of the chapter:

> In the following we shall mean by expansion a rising real net income and by contraction the opposite. Real net income reflects the volume of productive activity. But there is much to be said for measuring the latter by the change in real net income plus the allowance for wearing down fixed productive equipment[4], i. e. "value added by manufacture,"[5] adjusted for price changes. For neither net real income nor the quantity of manufacturing are index numbers readily available. Consequently, as an aggregate expression for the volume of productive activity it is customary to use an index number for the volume of gross output, as measured by the usual index numbers for the volume of output in manufacturing, agriculture, transportation etc. [15], 24.

Having thus defined his terms "expansion" and "contraction," Ohlin carefully specifies his initial conditions: Expansionary measures will be analyzed on the background of a depression in which

> Productive capacity in the majority of firms within manufacturing, transportation, and trade is merely in-

> completely utilized, e. g. output falls short of 80 to 90 per cent of what it might have been at practically the same fixed capital equipment and at the existing labor force in the various industries, perhaps after some migration of labor from one to the other. [15], 25.

Thus defined and thus starting, processes of expansion and contraction are then analyzed in much the same way they were analyzed in Secs. 6, 7, and 8 of the 1933 article——removing the last doubts that to Ohlin, physical output was a variable to be explained and to be affected by public policy.

The remainder of Ch. II is devoted to a study of money and capital markets similar to that offered in the 1933 article. But the chapter offers a first glimpse of the liquidity trap——to be elaborated in Chs. III and IV. Ohlin asks if monetary policy, in its efforts to reduce the interest rate, might encounter a floor to the latter. Ohlin finds such a floor:

> Rather than buying or owning bonds which have risen to a price considered unreasonable and expected soon to fall, capitalists will deposit their money, even on non-interest -bearing accounts. [15], 42.

Ch. III. Various Types of Conditions for Expansion

The chapter opens with a seven-page survey of business-cycle theory not found in the 1933 article. Ohlin observes that the volume of productive activity fluctuates more for capital goods than for consumers' goods. And he continues:

> It is clear that the business cycle implies changes in the quantity relations of the economy. ... A special quantity relation which seems to play a major role in the character of processes of expansion and contraction, has to do with the rate of growth of the total productive apparatus on the one hand and the size of it in industries producing durable capital goods on the other. For the rate of growth of the former to rise from 5 per cent per annum to 10 per cent per annum, the capacity of the latter industries must double if already fully utilized. But durable capital goods are also produced for replacement purposes. If average replacement amounts to 5 per cent per annum, then the increase of the rate of growth of the total productive apparatus mentioned above——which is not the same as that of output itself——would require a 50 per cent increase of the output of durable capital

goods: The annual output of new durable capital goods must rise from 10 to 15 per cent of the existing productive apparatus. [15], 50-51.

Here, then, is the accelerator. Sec. 7 in the 1933 article had described a cumulative process of expansion but had not tried to explain why such a process should come to an end. In Chapter III Ohlin now uses the accelerator to explain why it should: The accelerator links investment demand to the growth of output whereas the propensity to save links saving to the level of output. Those are very special conditions, and output may not satisfy them. Ohlin's intuitive reasoning about this matter on Pages 52-53 is reminiscent of the discussion 14 years later of a Harrod [5] unstable, knife-edge, growth path.

Ohlin did not consider the accelerator his own discovery. On Page 51 he refers to the Frisch-Clark discussion of it in the 1931-32 Journal of Political Economy. He must have known Clark's 1917 article [1] and must have heard about the accelerator from his teacher Cassel. But the ease with which Ohlin fits the accelerator into his Ch. III is nevertheless interesting. First it shows once again that to Ohlin, physical output was a variable. Can anything be more physical than the accelerator? Second it shows that

Ohlin's macroeconomics was dynamic. Let physical investment, capital stock, and output be I, S, and X, respectively; let a parametric capital coefficient be b; and our behavior relationship be $S = bX$. We explain investment by differentiating that behavior relationship with respect to time: $I \equiv dS/dt = bdX/dt$. But as soon as we are differentiating with respect to time, we are doing dynamics. Can anything be more dynamic than the accelerator?

The remainder of Ch. III is an account of ways in which an expansion might be generated in an economy left to itself. An expansion might, for example, be generated by improved expectations or by a lower propensity to save. The latter case was examined in Sec. 6 of the 1933 article, and the book repeats the examination.

Could an expansion also be generated by, say, a wage reduction or a higher propensity to save? The article did not examine these cases, but the book does. What they have in common, Ohlin says, is that both reduce consumption demand. A wage reduction reduces consumption demand and cost alike. Consequently, if prices would fall correspondingly, a decline in physical consumption could be avoided and profit margins would have remained the same. If prices did not fall correspondingly, profit margins would be up but physical consumption would be down. In a closed economy, Ohlin concludes, a wage reduction will hardly be capable of starting an expansion.

A higher propensity to save is even less likely to do so. It

would reduce consumption demand without reducing cost. Physical consumption would be down without any improvement in profit margins. But wouldn't investment be induced by a lower rate of interest? At this point the liquidity trap makes its second appearance. The relevant interest rate may encounter a floor:

> It is not a limited <u>total</u> amount of credit that keeps the rate of interest from falling to zero; many capitalists hold their money as demand deposits at zero interest rate. What is decisive for the rate of interest in this range is the limited amount of credit that capitalists are willing to "tie" to a specific placement such as bonds. If the effective bond yield falls below a certain level, that amount of credit will be reduced and fall short of the supply of bonds, and the yield will again rise. [15], 69.

Ch. IV. Monetary Policy Measures

The chapter opens with a clear but traditional analysis of the mechanism through which central-bank discount policy affects other rates of interest, prices, and the propensity to save. Then fol-

lows an equally clear analysis of open-market operations and their effects upon liquidity and lending rates of commercial banks and savings banks. The treatment is traditional until Ohlin discusses the effect of open-market operations upon bond prices. Here the liquidity trap makes its third and full appearance:

> Of great importance for the efficacy of buying and selling bonds by the central bank is the development of bond prices, i. e. the effective long-term rate of interest. How much the purchase of a certain amount of bonds will raise their prices depends first and foremost on the willingness of bondholders to sell, i. e. their supply curve. If there are many who believe that the declining yield will be temporary and therefore will sell their bonds already after an insignificant increase in bond prices, then the latter will indeed be insignificant. If, on the other hand, bondholders hold on to their bonds and merely supply a small quantity when prices are raised, then the price increase may become significant. [15], 85.

Like Keynes two years later, Ohlin sees a floor under the bond rate of interest: That rate is partly determined by what asset holders expect it to be. Ohlin's conclusion is the same as that of Keynes: Whatever the central bank intends to do it should do boldly and firmly, and it should declare its intention to do it.

Ohlin does not confine himself to monetary policy in a closed economy but carefully explores open-economy aspects of an expansionary monetary policy. There will be negative effects upon the balance of payments, both because expanding output at home will reduce the balance of trade, and because a lower interest rate will encourage short-term capital export. Under a gold standard the central bank has little room for maneuver vis-a-vis such negative effects. The best it can do is to widen the gap between the selling and buying price of gold, thus pushing the gold points farther apart. But under a paper standard the central bank may let prices of foreign currencies rise. The effect upon the balance of trade will be positive: Export will be stimulated and import discouraged. The effect upon short-term capital movements will depend upon expectations. Under a gold standard such movements are stabilizing, but under a paper standard they may be de-stabilizing and become, as Ohlin puts it (Page 93), "the masters rather than the servants of

exchange policy." Only a central bank possessing ample exchange reserves can remain in control. Such a central bank can steer expectations by operating in the forward exchange market.

Everything taken into account, then, is monetary policy a potent policy instrument? Ohlin sees two obstacles. The first is the liquidity trap now making its fourth appearance (on Page 96): "There is a limit below which it is difficult to reduce the rate of interest for long and medium-long loans." The second obstacle is the exchange situation: Does an ample exchange reserve exist? If not, will the country get away with an isolated devaluation or will it merely escalate the devaluation race?

A deep and widespread depression may leave monetary policy impotent. The trick must be, Ohlin says, to avoid getting into such a depression in the first place. That can only be done by preventing the expansion from going too far: "That an automobile is stuck in a ditch does not mean that keeping it on the road lies beyond the powers of good driving." [15], 96.

Ch. V. Public Works

Ohlin examines public works as follows. Let the monetary policy permitted by the balance-of-payments constraint be unable to

stimulate private investment. Let the government undertake some investment project——say highway construction or electrification of State railroads——which does not compete with private investment. Let the project be financed in a way——say central-bank discounting of treasury bills——which does not deprive private investment of finance.

Such public works will generate incremental income. With two leakages, i. e., import and saving, such incremental income will generate incremental consumption demand. The incremental consumption demand, in turn, will generate new incremental income to be spent subject to the same two leakages. The stage is set for the dynamic multiplier.

In its simplest possible form the dynamic multiplier would nowadays be set out as follows. Let consumption and income be C and Y, respectively. Let a parametric propensity to consume be c. Let income generated at time t - 1 be spent on consumption at time t: $C(t) = cY(t - 1)$. Let public works at time t generate the direct increment $dY(t)$ to income $Y(t)$. Let the public works have been going on for $\underline{n}$ periods. In addition to the direct increment $dY(t)$ at time t there will then be an indirect spillover of $cdY(t - 1)$ from public works at time t - 1, another indirect spillover of $c^2dY(t - 2)$ from public works at

time t - 2, ..., and a last indirect spillover of $c^n dY(t - n)$ from public works at time t - n, when they started. Let public works have been stationary, then $dY(t) = dY(t - 1) = dY(t - 2) = \ldots = dY(t - n)$. At time t the sum of all direct as well as spillover incremental income is

$$(1 + c + c^2 + \ldots + c^n)dY(t) = \frac{1 - c^{n+1}}{1 - c} dY(t)$$

This is exactly what Ohlin says in a numerical example in which $c = {}^1/_2$, dY(t) = 20 million kronor, n = 3, and the length of the unit period is three months:

> Imagine that the average "delay" among consumers——the "time lag"[6] of consumption response——is three months and that half the income——of labor, entrepreneurs, and taxpayers——buys Swedish goods, while the remainder buys imported goods or is saved. Then an income of <u>a kronor</u> in the first quarter will generate incomes of a/2, a/4, and a/8 etc. in the following quarters. If in each and every quarter of 1933 public works in Sweden

> would have directly generated 20 million kronor then the sum total of indirect income increments in the fourth quarter, generated by consumption responses to the public works undertaken in the preceeding three quarters, would be 10 + 5 + $2^1/_2$ million kronor. (P. 105).

In the fourth quarter, then, the sum of all direct as well as spillover incremental income is 20 + 10 + 5 + $2^1/_2$ = $37^1/_2$ million kronor——which is, of course, exactly the sum of our geometric progression for n = 3.

Like the accelerator, the multiplier was old hat in 1934. On Page 103 Ohlin refers to Kahn's celebrated, then three-year old, article [6]. But what Ohlin does and does not do with his multiplier in Ch. V says something about his method of analysis. The reader will notice three things.

First, the reader will notice Ohlin's use of the income -consumption lag. This makes his use unequivocally dynamic. Second, the reader will notice Ohlin's use of a finite value of the number of periods considered: n = 3. Ohlin never bothers to find the limit of his geometrical progression for n approaching

infinity. That limit would have been a multiplier of $1/(1 - c) = 2$, i. e., 20 million kronor's worth of expenditure would have generated 40 million kronor's worth of income! That limit would have been the static multiplier used by Keynes [7], 115. Why didn't Ohlin even bother to find it? Ohlin's strong sense of realism probably told him two things: Public works don't last forever, so n doesn't go to infinity. Anyway the important thing is that after merely three quarters $37^1/_2$ million kronor's worth of income has been generated. The difference between 40 and $37^1/_2$ was not important to Ohlin.

The third important thing about Ohlin's use of the multiplier are his afterthoughts: The mechanical consumption-demand multiplier is merely one part of the story. There are other important repercussions. One is inventory adjustment: How soon do retailers, wholesalers, and manufacturers replenish depleted inventory? Another is investment in plant and equipment: How soon does rising demand necessitate such expansion? The answers will depend upon expectations and confidence. Ohlin discusses such speeds of reaction at length: His multiplier approach is thoroughly dynamic.

The remainder of Ch. V[7] asks such questions as: Should public works be financed by borrowing or by taxes? Tax financing would reduce consumption and thus defeat the purpose of public works. If financed by borrowing, should public works be financed by the central bank or by the private capital market? Government bonds

sold in the private capital market might depress bond prices and thus discourage private investment. What is the cost of public works to the economy? If the resources absorbed by them would otherwise have been idle, the cost is zero. How can public works be productive if they aren't profitable? If they absorbed resources taken out of better uses they would be unproductive or indeed counterproductive. But if the resources would otherwise have been idle, public works are productive as soon as they produce anything of use. Don't public works financed by borrowing mean living now at the expense of the future? Public works do not mean capital consumption. On the contrary future capital stock is increased by highway construction or electrification of State railroads, and the future will be better, not worse, off for it.

Ohlin's answers to such questions would be standard textbook answers today, but in 1934 they were new.

Ch. VI. Subsidizing Private Production

Subsidizing private investment has effects upon output and income very similar to those of public works. But other effects are different.

First, subsidies leave more room for selective private initia-

tive: Projects closest to being profitable will be the first ones activated by subsidies. Second, the government outlay on subsidies is a fraction of total outlay. Consequently it matters less whether that outlay is financed by borrowing or taxation. Third, subsidies do not create future government assets like highways or electric State railroads. Consequently traditional fiscal principles would suggest tax financing.

Subsidies raise problems of their own. A subsidy favoring one industry may jeopardize another, competitive, industry. There is always the danger of corruption. But to a civil service with a corruption threshold as high as the Swedish one, Ohlin dismisses the corruption problem as an administrative one.

Ch. VII. Tariff Policy and Capital Movements

Ohlin aptly characterizes the effects of a higher tariff in terms of his theoretical apparatus developed in Chs. V and VI. In terms of Ch. VI a higher tariff will raise the multiplier by reducing the import leakage. In terms of Ch. V it will ease the balance-of-payments constraint upon monetary policy. Indeed filling the space, now less constrained, will to some extent be automatic: As

we know, every central-bank purchase of foreign exchange from exporters will expand the money supply, and every sale to importers will reduce it. Consequently, a tariff reducing import more than export will expand central-bank assets and with them the money supply. In other words, the monetary effect of a higher tariff is much the same as that of open-market bond purchases by the central bank.

Public works raised an important fiscal problem. Like subsidies, tariff policy merely raises a minor one. Indeed, inelastic import demand may even raise government revenue! Whether government revenue is down or up, it will have repercussions upon output and income. Such repercussions will have to be examined, Ohlin adds.

Long-term tariff policy might be designed to be countercyclical, i. e., protectionist in depressions, free-trade in booms——helping to keep expansions from going too far.

Ch. VIII. Expansion, Structural Change, and Unemployment

Ohlin's last chapter examines measures to help specific industries suffering from short-run problems like dumping or violent world-market price falls or from long-run ones like lagging technology or declining demand. The chapter is less macroeconomic than the

previous ones and neither introduces nor applies new theoretical tools.

III. RETROSPECT

The Critics of the Stockholm School[8]

The two leading critics of the Stockholm School, Lerner [9] and Landgren [8], share, first, the use of a static Keynesian equilibrium as their standard of comparison, second, a strong conviction of its superiority to dynamics as a practical tool of analysis and, third, great lucidity in setting out their argument. But their native tongues differed. Ohlin's 1933 article and 1934 book were accessible to Landgren only.

Both for that reason and because his article [9] was a review article of translations of Lindahl's and Myrdal's work, Lerner never mentioned Ohlin. As for Lindahl and Myrdal, the verdict was that they had been "caught up with and overtaken by Mr. Keynes" [9], 591. We can only guess if Lerner would have included Ohlin in that verdict, had he known Ohlin's work. He might have liked Ohlin's explicit use of physical output as a variable. But he

would have liked Ohlin's dynamics no better than he liked Lindahl's and Myrdal's on which he said,

> For practical purposes, compromises and simplifications have to be made, and when this has been done, it seems to me that little if anything has been gained as compared with the simplifications and compromises of equilibrium analysis... [9], 589.

Twenty years after Lerner, the late Karl-Gustav Landgren [8] offered his comprehensive re-appraisal of the Stockholm School. Very briefly expressed, his verdict was that the Stockholm School neither anticipated nor appreciated Keynes' breakthrough. But Landgren does single out Ohlin as the shining exception. He alone "carried out a Keynesian revolution in Swedish economics" [8], English-language summary, 299. Such treatment might seem gratifying to Ohlin until one examines Landgren's documentation. Landgren, no friend of dynamics, ascribes to Ohlin a rather un-Ohlinian static-equilibrium determination of income and output. As Fernholm [2] pointed out in his comprehensive review article, this is a misrepresentation of Ohlin. To his theoretical misrepresentation Landgren added a historical one, less gratifying to Ohlin: Ohlin

must have seen the Keynesian light only after reading Keynes' March, 1933 letters to the London Times, assembled in the April, 1933 pamphlet The Means to Prosperity. Steiger [17], [18] has shown that Ohlin's manuscript was completed in the fall of 1932. The debate was rounded off by Lundberg's [10] balanced and elegant article entitled, in English translation, "On Comprehending Keynes and Understanding Others".

My Own Conclusion

In his 1933 article Ohlin applied two Keynesian tools of analysis, i. e., (1) physical output as a variable and (2) the propensity to save. In his 1934 book Ohlin's emphasis on physical output as a variable became stronger and more explicit. In retrospect, Ohlin sees nothing strange in this. In a letter to this writer of December 2, 1977 he writes, in English translation,

> I am also happy that you emphasize so strongly that the quantity of aggregate output and employment were variables in my 1933-34 thinking. The very assignment given by the Unemployment Committee referred to the quantity of employment, and it would have been downright impossible not to

consider the latter a variable and with it national income in terms of quantity side by side with the price level and income in terms of value.

In his 1934 book Ohlin applied two additional Keynesian tools of analysis, i. e., (3) liquidity preference and (4) the multiplier, and finally a non-Keynesian one, i. e., (5) the accelerator.

Liquidity preference must have been discovered by Ohlin. Indeed, glimpses of it are found even in his pre-1933 writings such as his paper at the Scandinavian economists' 1931 meeting [12] and his League of Nations report [13] in the same year.

The accelerator and the multiplier were discovered by others, but Ohlin's use of them shows how dynamic his macroeconomics was. The accelerator is inherently dynamic and incompatible with a static equilibrium, and Keynes never mentioned it. But if Keynes could do without it, his followers could not. Lerner and Landgren notwithstanding, "the economist has no choice but to study dynamics," as Samuelson once put it. In the very year of General Theory, Harrod [4] gave the accelerator a prominent place in his Trade Cycle. Prompted by Alvin Hansen, Samuelson [16] three years later dynamized the Keynesian system by his celebrated interaction between the multiplier and the accelerator.

Unlike the accelerator, the multiplier is not inherently dyna-

mic. A static multiplier may be formulated and was———by Keynes. As shown above, one may find the limit of my geometrical progression for n approaching infinity. That limit is the static multiplier 1/(1 - c) used by Keynes [7], 115. For such a multiplier Ohlin had no use. He never bothered to find the limit 1/(1 - c). His sense of realism must have told him that public works don't last forever, so n doesn't go to infinity. Instead, Ohlin discussed speeds of reaction at length.

Ohlin used his five tools to derive some strikingly Keynesian policy conclusions. In times of underutilized capacity and unemployment a government should not try to encourage a wage reduction or a higher propensity to save. Instead, it should conduct

(1) A monetary policy of open-market operations designed to depress the rate of interest———subject to a liquidity-trap constraint and a balance-of-payments contraint,

(2) A policy of public works, generating income magnified by the multiplier,

(3) A policy of———much less expensive———subsidies to private investment doing the same,

(4) A policy of raising tariffs, thus enlarging the multiplier and easing the balance-of-payments constraint upon monetary policy.

All this was in the 1934 book. Much of the necessary analytical apparatus was explicitly present in Ohlin's 1933 article. But not all. Was the rest of it implicit in that article——trying to get out of its cocoon and succeeding in doing so in 1934? Or was the rest new and independent theory? We do not know, but what matters is that by 1934 both Keynesian theory in a dynamic form and Keynesian policy conclusions had been anticipated by Ohlin.

F O O T N O T E S

[1]In Ch. 17 of General Theory [7], 222-229, Keynes did consider "own rates" of interest like a wheat rate of interest, a copper rate of interest, etc. and discussed their carrying-cost and liquidity aspects. In Ch. 11 [7], 142-143 Keynes discussed Fisher's [3] aspect of such "own-rates" but remained unconvinced.

[2]On the committee, its findings, and its impact, see Uhr [20].

[3]The Swedish word "sparbenägenhet" is composed of "spar[a]" ≡ to save and "benägenhet". To neutralize my bias as an economist, I consulted my Swedish-English dictionary and found three English equivalents offered for the word "benägenhet," i. e. disposition, inclination, and propensity. The latter offering was exemplified by "benägenhet för att ljuga" ≡ propensity to lie, and "benägenhet för dryckenskap" ≡ propensity to drink.

[4]i. e., capital consumption allowances

[5]Ohlin uses the English words.

[6]Ohlin uses the English words.

[7]From now on our review of Ohlin's 1934 book will be very brief. Our primary interest has been Ohlin's theoretical innovation, and the remainder of the book specifies policy recommendations and is well summarized by Uhr [20], particularly 107-110.

[8]Paul Samuelson encouraged me to do this section.

REFERENCES

[1] Clark, J. M., "Business Acceleration and the Law of Demand: A Technical Factor in Economic Cycles," Journal of Political Economy 25, March 1917, 217-235.

[2] Fernholm, T., "Idéutveckling, ekonomisk politik och ekonomisk teori," Ekonomisk Tidskrift 62, Sep. 1960, 161-184.

[3] Fisher, I., "Appreciation and Interest," Publications of the American Economic Association 11, Aug. 1896, 331-442.

[4] Harrod, R. F., The Trade Cycle. Oxford 1936.

[5] Harrod, R. F., Towards a Dynamic Economics. London 1948.

[6] Kahn, R. F., "The Relation of Home Investment to Unemployment," Economic Journal 41, June 1931, 173-198.

[7] Keynes, J. M., The General Theory of Employment, Interest and Money. London 1936.

[8] Landgren, K.-G., Den "nya ekonomien" i Sverige. J. M. Keynes, E. Wigforss, B. Ohlin och utvecklingen 1927-39. Uppsala 1960.

[9] Lerner, A. P., "Some Swedish Stepping Stones in Economic Theory," Canadian Journal of Economics and Political Science 6, 1940, 574-591.

[10] Lundberg, E., "Om att begripa Keynes och att förstå andra," Ekonomisk Tidskrift 62, Sep. 1960, 195-205.

[11] Mundell, R. A., Monetary Theory: Inflation, Interest, and Growth in the World Economy. Pacific Palisades 1971.

[12] Ohlin, B., "Den internationella penningpolitiken och dess inverkan på konjunkturutvecklingen," Nordiska nationalekonomiska mötet, June 1931.

[13] Ohlin, B., The Course and Phases of the World Economic Depression. Geneva 1931.

[14] Ohlin, B., "Till frågan om penningteoriens uppläggning," Ekonomisk Tidskrift 35, 1933, 45-81.

[15] Ohlin, B., Penningpolitik, offentliga arbeten, subventioner och tullar som medel mot arbetslöshet, Statens offentliga utredningar 1934:12, Stockholm 1934.

[16] Samuelson, P. A., "Interactions Between the Multiplier Analysis and the Principle of Acceleration," Review of Economic Statistics 21, May 1939, 75-78.

[17] Steiger, O., Studien zur Entstehung der neuen Wirtschaftslehre in Schweden. Berlin 1971.

[18] Steiger, O., "Bertil Ohlin and the Origins of the Keynesian Revolution," History of Political Economy 8, Fall 1976, 341-366.

[19] Turgot, A. R. J., "Réflexions sur la formation et la distribution des richesses," Ephémérides du citoyen, Nov. 1769-Jan. 1770. English translation, Reflections on the Formation and the Distribution of Riches. New York, 1898.

[20] Uhr, C. G., "Economists and Policymaking 1930-1936: Sweden's Experience," History of Political Economy 9, Spring 1977, 89-121.

[21] Wicksell, K., Geldzins und Güterpreise. Jena 1898. English translation, Interest and Prices. London 1936.

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